

WHAT IS CLAIMED IS:

1. A light shutter device comprising:
a light source which emits light of a plurality of colors switching
5 from one to another in order;
a plurality of light shutter elements made of a material with an
electro-optical effect, said light shutter elements controlling in accordance
with image data whether to transmit or not to transmit the light which
has been emitted from the light source and is incident to the light shutter
10 elements; and
a driver for driving the light shutter elements, said driver altering
a driving condition in synchronization with switch of the colors of the
light source.
- 15 2. The light shutter device according to claim 1, wherein:
the light source comprises:
a lamp; and
a multiple color filter which is located between the lamp
and the light shutter elements; and
20 by switching the multiple color filter in order, the light incident to
the light shutter elements is switched between a plurality of colors in
order.
- 25 3. The light shutter device according to claim 1, wherein the driving
condition to be altered is a driving voltage applied to the light shutter
elements.

4. The light shutter device according to claim 3, wherein:

the light shutter elements are driven by application of a voltage between a common electrode for all the light shutter elements and individual electrodes for the respective light shutter elements; and

5 the driving condition is altered by altering a potential of the common electrode to alter an electric field acting on the light shutter elements depending on the color of the light emitted from the light source.

10 5. The light shutter device according to claim 4, wherein the colors of the light emitted from the light source are three primary colors of red, green and blue.

15 6. The light shutter device according to claim 5, wherein the individual electrodes are set to have a potential corresponding to a half-wave voltage of the light shutter elements for red light.

20 7. The light shutter device according to claim 5, wherein the individual electrodes are set to have a potential corresponding to a half-wave voltage of the light shutter elements for blue light.

8. The light shutter device according to claim 5, wherein the individual electrodes are set to have a potential corresponding to a half-wave voltage of the light shutter elements for green light.

25 9. The light shutter device according to claim 3, wherein the driver inverts an electric field acting on the light shutter elements at specified

cycles.

10. The light shutter device according to claim 9, the electric field is inverted every after a cycle of switching the colors of the light from the
5 light source.

11. The light shutter device according to claim 3, wherein the driver superimposes a spike pulse voltage at a start of applying the driving voltage to the light shutter elements.
10

12. The light shutter device according to claim 9, wherein the driver superimposes a spike pulse voltage at a start of applying the driving voltage to the light shutter elements.

13. An array type writing device comprising:
15 a light source which emits light of a plurality of colors switching from one to another in order;

a plurality of light shutter elements made of a material with an electro-optical effect, said light shutter elements controlling in accordance
20 with image data whether to transmit or not to transmit the light which has been emitted from the light source and is incident to the light shutter elements; and

a driver for applying a voltage between a common electrode for all the light shutter elements and individual electrodes for the respective
25 light shutter elements to drive the light shutter elements, said driver setting the individual electrodes to have potentials in accordance with

image data and altering a driving condition of the common electrode in synchronization with switch of the colors of the light source.

14. The array type writing device according to claim 13, wherein the
5 individual electrodes are set to have a potential corresponding to a half-wave voltage for light of one of the colors emitted from the light source.

15. A method for driving a light shutter device, comprising the steps of:

10 making light of a first color from a light source, which is capable of
emitting light of a plurality of colors, incident to a plurality of light
shutter elements made of a material with an electro-optical effect;

in synchronization with the incidence of the light of the first color to the light shutter elements, setting individual electrodes for the respective light shutter elements to have potentials in accordance with
15 image data by controlling a driver which drives the light shutter elements;

in synchronization with the incidence of the light of the first color
to the light shutter elements, setting a common electrode for all the light
20 shutter elements to have a first potential by controlling the driver;

after the incidence of the light of the first color to the light shutter elements, making light of a second color from the light source incident to the light shutter elements;

in synchronization with the incidence of the light of the second
25 color to the light shutter elements, setting the individual electrodes to
have potentials in accordance with image data by controlling the driver;

in synchronization with the incidence of the light of the second color to the light shutter elements, setting the common electrode to have a second potential which is different from the first potential by controlling the driver;

- 5 after the incidence of the light of the second color to the light shutter elements, making light of a third color from the light source incident to the light shutter elements;

- in synchronization with the incidence of the light of the third color to the light shutter elements, setting the individual electrodes to have potentials in accordance with image data by controlling the driver; and
- 10

 in synchronization with the incidence of the light of the third color to the light shutter elements, setting the common electrode to have a third potential which is different from the first potential and from the second potential by controlling the driver.

15

16. The method according to claim 15, wherein the individual electrodes are set to have a potential corresponding to a half-wave voltage of the light shutter elements for light of one of the colors emitted from the light source.

20

17. The method according to claim 15, wherein the driver inverts an electric field acting on the light shutter elements at specified cycles.

18. The method according to claim 15, wherein the driver superimposes a spike pulse voltage at a start of setting the individual electrodes and the common electrode to have the respective potentials.

25